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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,528	12/13/2005	Masashi Gotoh	282143US2PCT	6392
22850 7590 07/24/2009 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER AHMED, SHAMIM	
			ART UNIT 1792	PAPER NUMBER
			NOTIFICATION DATE 07/24/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/560,528	Applicant(s) GOTOH ET AL.	
	Examiner Shamim Ahmed	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/13/05 & 9/26/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because the abstract of dated 3/17/09 is too long. Correction is required. See MPEP § 608.01(b).
2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Drawings

3. Figures 6A-6D and 7A-7C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Regarding claim 1, line 3, the phrase "which is adjacent to said conductor film" renders the claim indefinite because it is unclear whether the term "which" refers to the "lower conductor layer" or the "insulating member" or "the electronic part" to be formed.

7. Regarding claim 1, lines 5-6, the phrase "forming a plurality of opening portions----- as bottoms in the formed area of said conductor portions form said conductor film side" renders the claim indefinite because it is unclear because the conductor portions are not formed yet, while forming the openings.

8. Regarding claim 2, lines 6-8, the phrase " and thereafter forming a plurality of opening portions----- as a bottom in said protective film and said conductor film in the formed area of said conductor portion" renders the claim indefinite because it is unclear because the conductor portions are not formed yet, while forming the openings.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itabashi (6,370,768).

Itabashi discloses a process for forming a conductor portion (25) including the step of forming a lower conductor layer (3), an upper conductor film (4) in a insulating substrate (1), wherein the insulating substrate is sandwiched between the lower conductor layer and the upper conductor film and forming a plurality of openings or via holes (2) to be filled by metal layer in order to form the conductor portions and metal plating is initiated at the bottom of the via holes from the first or bottom conductor layer (col.4, lines 35-49, col.6, lines 48-62).

Itabashi also discloses that the metal plating start at the bottom of the via hole or opening with the help of a reference electrode or using the substrate conductor film or layer and as the metal plating progresses upward from the bottom of the via hole and the plating is stopped upon reaches the upper conductor film (4) and completely filled the via hole (col.11, lines 25-42).

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Itabashi discloses that growing or forming a metal plated layer (7) on the entire surface including the via hole and the upper conductor film (4) by electroplating process (col.11, lines 52-61).

Unlike the instant invention, Itabashi may not explicitly teach that the growing speed is lower during the metal plating layer (7) formation while it contacts with the upper conductor film (4).

However, it would have been obvious as Itabashi discloses that the metal plating layer (7) is performed by electroplating process and during this electroplating process, the conductor portion and the upper conductor film (4) works as an electrode as both the portions are exposed during the electroplating step.

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to employ Itabashi's teaching of the above electroplating process for filling the via hole and the metal plated layer as the upper conductor film (4) and the via hole filling metal (25) can be the same metal material as suggested by (see col.11, lines 62-66).

One of ordinary skilled in the art would have been motivated to do so as the same metal material can be formed for the both the steps such as filling the via holes and the overlying metal plated layer (7) for reducing process cost and as well as reducing contamination.

As to claim 2, the upper conductor film (4) reads on the claimed protective film form on a part of the upper surface of the insulating substrate.

As to claims 3 and 5, Itabashi appears to teach the conductor portions (metal plated via hole) are exposed during the metal plating layer (7).

As to claims 4 and 6, it appears that the insulating substrate and the conductor film are made integral with each other prior to the metal plating (see figures 6a-6f).

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tada et al (2001/0054558) and Maydan et al (2002/0084192) illustrate conventional metal plating without void in the plated portions. Gilton et al (5,151,168) teach conventional electrolytic metal plating process.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on Tu-Fri (6:00-2:30) Every Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Shamim Ahmed
Primary Examiner
Art Unit 1792

SA
July 17, 2009

/Shamim Ahmed/
Primary Examiner, Art Unit 1792